

SAFETY.CAT.COM™

SAFETY

Operation and Maintenance
Manual Excerpt



Operation and Maintenance Manual

D5N Track-Type Tractor

AKD1-Up (Machine)
AGG1-Up (Machine)
CFH1-Up (Machine)
CKT1-Up (Machine)

Important Safety Information

Most accidents that involve product operation, maintenance and repair are caused by failure to observe basic safety rules or precautions. An accident can often be avoided by recognizing potentially hazardous situations before an accident occurs. A person must be alert to potential hazards. This person should also have the necessary training, skills and tools to perform these functions properly.

Improper operation, lubrication, maintenance or repair of this product can be dangerous and could result in injury or death.

Do not operate or perform any lubrication, maintenance or repair on this product, until you have read and understood the operation, lubrication, maintenance and repair information.

Safety precautions and warnings are provided in this manual and on the product. If these hazard warnings are not heeded, bodily injury or death could occur to you or to other persons.

The hazards are identified by the "Safety Alert Symbol" and followed by a "Signal Word" such as "DANGER", "WARNING" or "CAUTION". The Safety Alert "WARNING" label is shown below.



The meaning of this safety alert symbol is as follows:

Attention! Become Alert! Your Safety is Involved.

The message that appears under the warning explains the hazard and can be either written or pictorially presented.

A non-exhaustive list of operations that may cause product damage are identified by "NOTICE" labels on the product and in this publication.

Caterpillar cannot anticipate every possible circumstance that might involve a potential hazard. The warnings in this publication and on the product are, therefore, not all inclusive. You must not use this product in any manner different from that considered by this manual without first satisfying yourself that you have considered all safety rules and precautions applicable to the operation of the product in the location of use, including site-specific rules and precautions applicable to the worksite. If a tool, procedure, work method or operating technique that is not specifically recommended by Caterpillar is used, you must satisfy yourself that it is safe for you and for others. You should also ensure that the product will not be damaged or become unsafe by the operation, lubrication, maintenance or repair procedures that you intend to use.

The information, specifications, and illustrations in this publication are on the basis of information that was available at the time that the publication was written. The specifications, torques, pressures, measurements, adjustments, illustrations, and other items can change at any time. These changes can affect the service that is given to the product. Obtain the complete and most current information before you start any job. Cat dealers have the most current information available.



When replacement parts are required for this product Caterpillar recommends using Cat replacement parts or parts with equivalent specifications including, but not limited to, physical dimensions, type, strength and material.

Failure to heed this warning can lead to premature failures, product damage, personal injury or death.

In the United States, the maintenance, replacement, or repair of the emission control devices and systems may be performed by any repair establishment or individual of the owner's choosing.

Foreword

Literature Information

This manual should be stored in the operator's compartment in the literature holder or seat back literature storage area.

This manual contains safety information, operation instructions, transportation information, lubrication information and maintenance information.

Some photographs or illustrations in this publication show details or attachments that can be different from your machine. Guards and covers might have been removed for illustrative purposes.

Continuing improvement and advancement of product design might have caused changes to your machine which are not included in this publication. Read, study and keep this manual with the machine.

Whenever a question arises regarding your machine, or this publication, please consult your Caterpillar dealer for the latest available information.

Safety

The safety section lists basic safety precautions. In addition, this section identifies the text and locations of warning signs and labels used on the machine.

Read and understand the basic precautions listed in the safety section before operating or performing lubrication, maintenance and repair on this machine.

Operation

The operation section is a reference for the new operator and a refresher for the experienced operator. This section includes a discussion of gauges, switches, machine controls, attachment controls, transportation and towing information.

Photographs and illustrations guide the operator through correct procedures of checking, starting, operating and stopping the machine.

Operating techniques outlined in this publication are basic. Skill and techniques develop as the operator gains knowledge of the machine and its capabilities.

Maintenance

The maintenance section is a guide to equipment care. The Maintenance Interval Schedule (MIS) lists the items to be maintained at a specific service interval. Items without specific intervals are listed under the "When Required" service interval. The Maintenance Interval Schedule lists the page number for the step-by-step instructions required to accomplish the scheduled maintenance. Use the Maintenance Interval Schedule as an index or "one safe source" for all maintenance procedures.

Maintenance Intervals

Use the service hour meter to determine servicing intervals. Calendar intervals shown (daily, weekly, monthly, etc.) can be used instead of service hour meter intervals if they provide more convenient servicing schedules and approximate the indicated service hour meter reading. Recommended service should always be performed at the interval that occurs first.

Under extremely severe, dusty or wet operating conditions, more frequent lubrication than is specified in the maintenance intervals chart might be necessary.

Perform service on items at multiples of the original requirement. For example, at every 500 service hours or 3 months, also service those items listed under every 250 service hours or monthly and every 10 service hours or daily.

California Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

Battery posts, terminals and related accessories contain lead and lead compounds. **Wash hands after handling.**

Certified Engine Maintenance

Proper maintenance and repair is essential to keep the engine and machine systems operating correctly. As the heavy duty off-road diesel engine owner, you are responsible for the performance of the required maintenance listed in the Owner Manual, Operation and Maintenance Manual, and Service Manual.

It is prohibited for any person engaged in the business of repairing, servicing, selling, leasing, or trading engines or machines to remove, alter, or render inoperative any emission related device or element of design installed on or in an engine or machine that is in compliance with the regulations (40 CFR Part 89). Certain elements of the machine and engine such as the exhaust system, fuel system, electrical system, intake air system and cooling system may be emission related and should not be altered unless approved by Caterpillar.

Machine Capacity

Additional attachments or modifications may exceed machine design capacity which can adversely affect performance characteristics. Included would be stability and system certifications such as brakes, steering, and rollover protective structures (ROPS). Contact your Caterpillar dealer for further information.

Caterpillar Product Identification Number

Effective First Quarter 2001 the Caterpillar Product Identification Number (PIN) has changed from 8 to 17 characters. In an effort to provide uniform equipment identification, Caterpillar and other construction equipment manufacturers are moving to comply with the latest version of the product identification numbering standard. Non-road machine PINs are defined by ISO 10261. The new PIN format will apply to all Caterpillar machines and generator sets. The PIN plates and frame marking will display the 17 character PIN. The new format will look like the following:

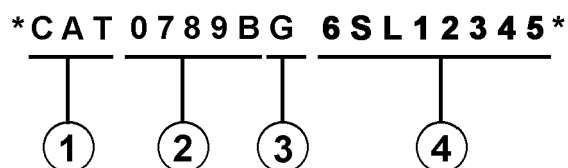


Illustration 1

g00751314

Where:

1. Caterpillar's World Manufacturing Code (characters 1-3)
2. Machine Descriptor (characters 4-8)

3. Check Character (character 9)

4. Machine Indicator Section (MIS) or Product Sequence Number (characters 10-17). These were previously referred to as the Serial Number.

Machines and generator sets produced before First Quarter 2001 will maintain their 8 character PIN format.

Components such as engines, transmissions, axles, etc. and work tools will continue to use an 8 character Serial Number (S/N).

Safety Section

i02424681

Safety Messages (D5N Track-Type Tractor)

SMCS Code: 7000; 7405

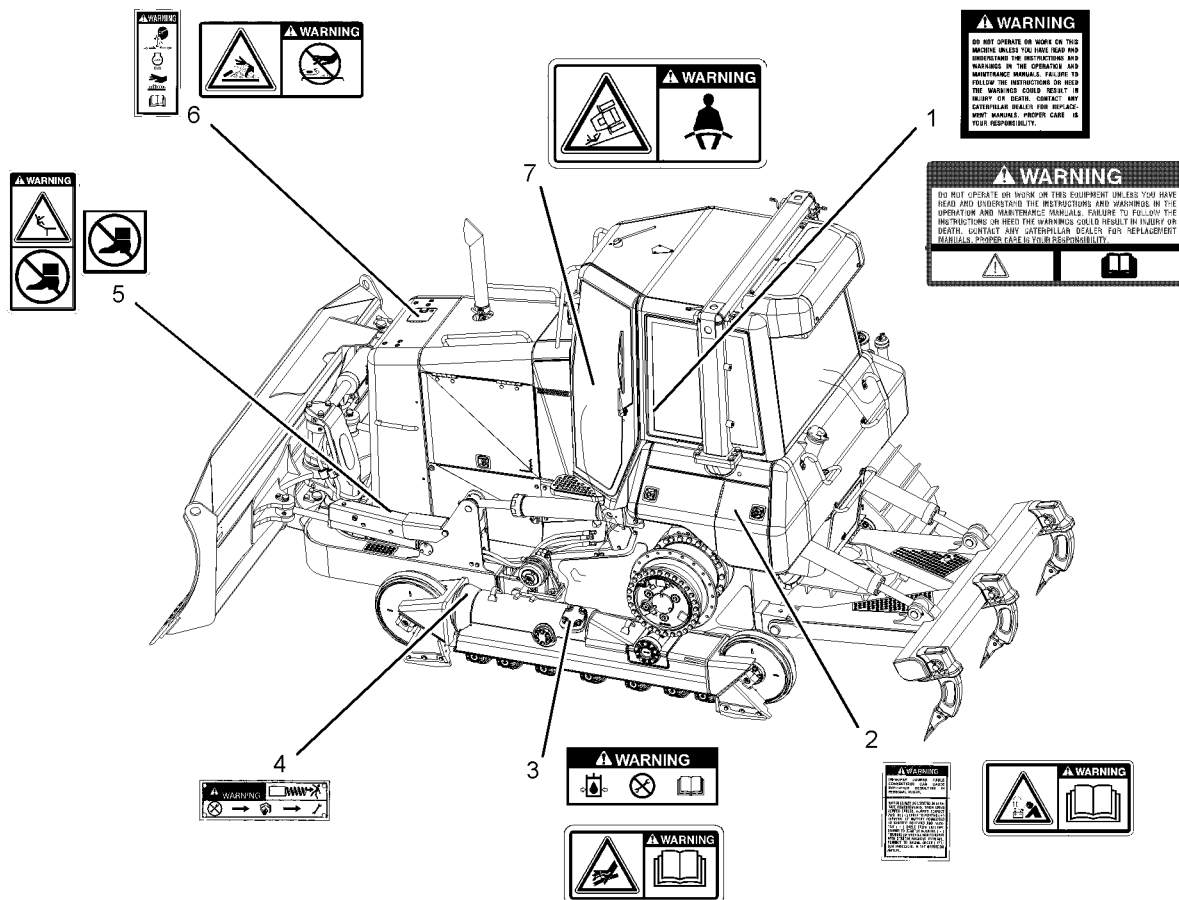


Illustration 2

g01211654

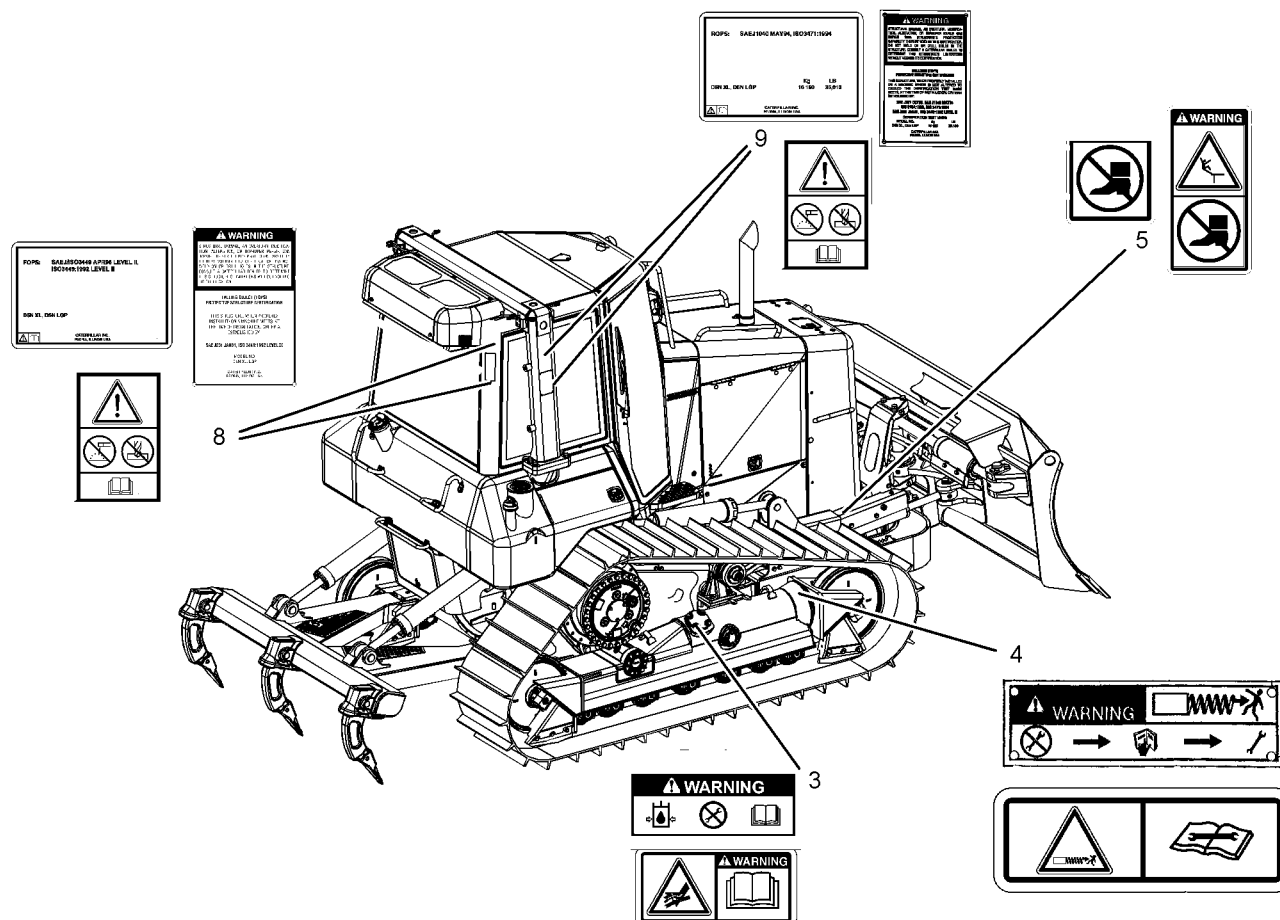


Illustration 3

g01211659

There are several specific safety messages on this machine. The exact location of the hazards and the description of the hazards are reviewed in this section. Please become familiarized with all safety messages.

Make sure that all of the safety messages are legible. Clean the safety messages or replace the safety messages if you cannot read the words. Replace the illustrations if the illustrations are not visible. When you clean the safety messages, use a cloth, water, and soap. Do not use solvent, gasoline, or other harsh chemicals to clean the safety messages. Solvents, gasoline, or harsh chemicals could loosen the adhesive that secures the safety message. Loose adhesive will allow the safety message to fall.

Replace any safety message that is damaged or missing. If a safety message is attached to a part of the machine that is replaced, install a safety message on the replacement part. Any Caterpillar dealer can provide new safety messages.

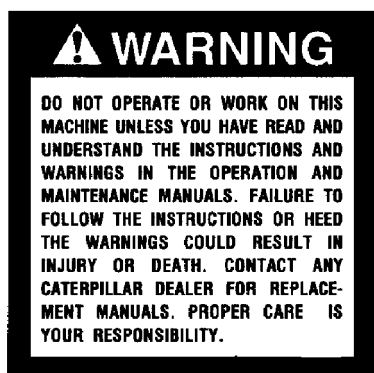
Do Not Operate (1)



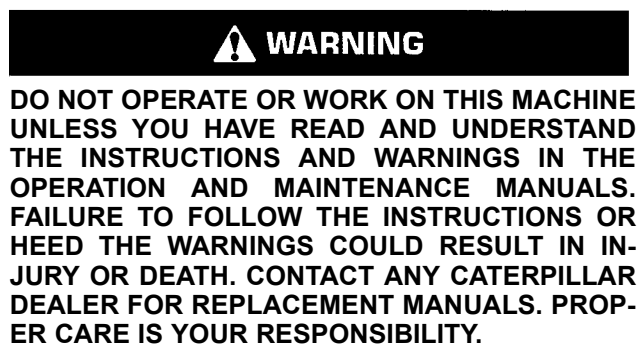
Illustration 4

g00930652

Safety Message (1) is positioned 230 mm (9.05 inch) above the bottom of the left post.



g01211662



Improper Connections for Jump Start Cables (2)

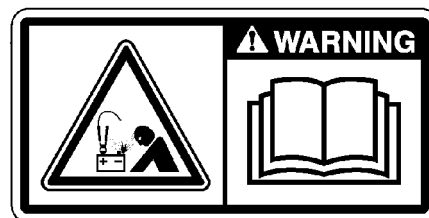
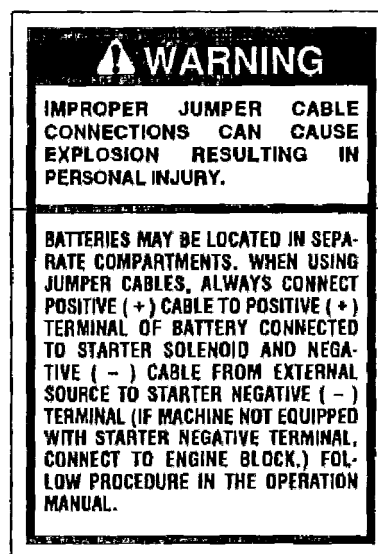


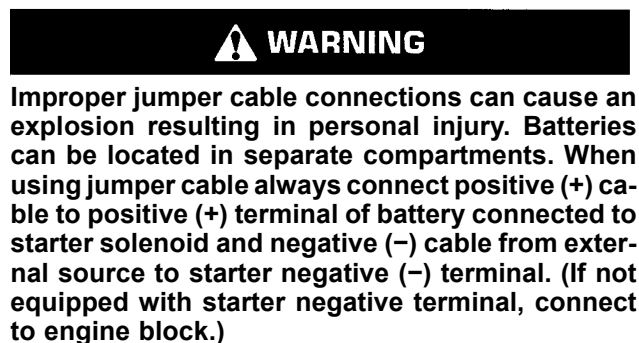
Illustration 5

g01211675

Safety Message (2) is in the battery compartment.



g01211675



High Pressure Cylinder (3)

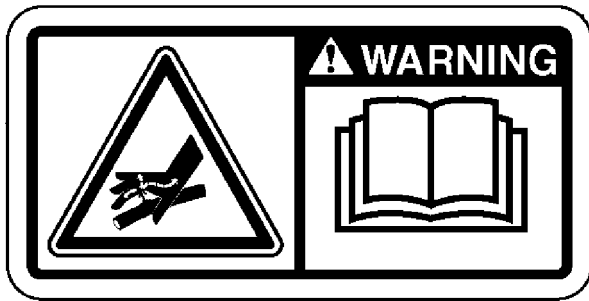


Illustration 6

g01211678

Safety Message (3) is attached to the cover for each recoil spring compartment.

Compressed Recoil Spring (4)

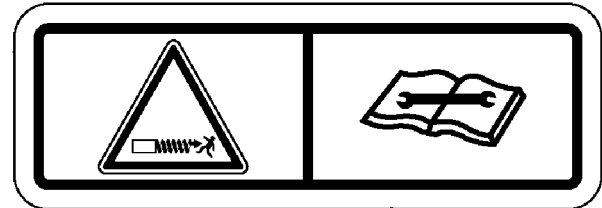


Illustration 7

g01056162

Safety Message (4) is located inside both track roller frames at the end of the tube for the roller frame.



g01211683



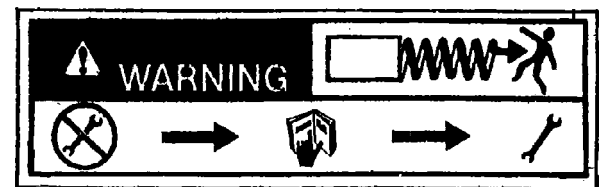
Personal injury or death can result from grease under pressure.

Grease coming out of the relief valve under pressure can penetrate the body causing injury or death.

Do not watch the relief valve to see if grease is escaping. Watch the track or track adjustment cylinder to see if the track is being loosened.

Loosen the relief valve one turn only.

If track does not loosen, close the relief valve and contact your Caterpillar dealer.



g01211685



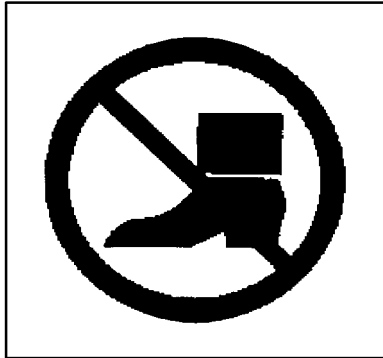
Personal injury or death can result from a compressed recoil spring being released suddenly using incorrect disassembly procedures.

A recoil spring that is still held in compression can result in the recoil spring being released unexpectedly with extreme force which could cause serious injury or death.

Make sure that the correct disassembly procedure is used, if a front track roller frame that has a crack in the parent metal or weld connection (or a tubular section that has separated from the front of the frame assembly) when the recoil spring is still held in compression.

Refer to Special Instruction, SMHS8273 which contains the disassembly procedure that must be used to decrease the possibility of injury while performing service on the track roller frame.

Hot Coolant Under Pressure (6)



g00936182

The image shows two safety signs side-by-side. The left sign is a triangular warning sign with a black border, depicting a falling object. The right sign is a rectangular prohibition sign with a black border, featuring a hand holding a lit match over a flame, with the word "WARNING" in bold capital letters above it.

g01211688

g01211686



A vertical sequence of three safety warnings. The first shows a CD being thrown at a CD-ROM drive with the text "CD-ROM DRIVE" below it. The second shows a hand being caught in a door with the text "DOOR" below it. The third shows a book being crushed with the text "BOOK" below it.

g00782457



Pressurized system: Hot coolant can cause serious burn. To open cap, stop engine, wait until radiator is cool. Then loosen cap slowly to relieve the pressure.

Seat belt (7)

Safety Message (6) is located on the left side of dash panel.



g01211690

WARNING

A seat belt should be worn at all times during machine operation to prevent serious injury or death in the event of an accident or machine overturn. Failure to wear a seat belt during machine operation may result in serious injury or death.

Do Not Weld on FOPS (8)

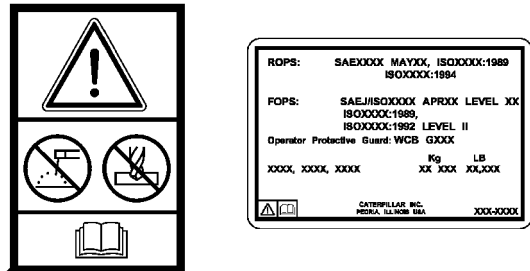


Illustration 10

g01211691

Safety Message (7) is located on the FOPS.



g01211693

WARNING

Structural damage, an overturn, modification, alteration, or improper repair can impair this structure's protection capability thereby voiding this certification. Do not weld on or drill holes in the structure. Consult a Caterpillar dealer to determine this structure's limitations without voiding its certification.

Do Not Weld On ROPS (9)

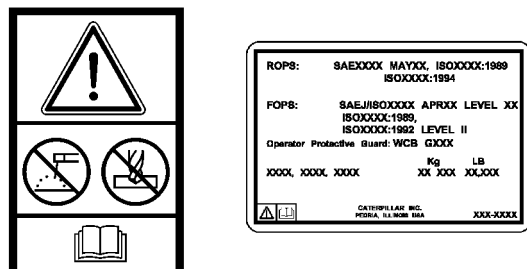


Illustration 11

g01211695

Safety Message (8) is positioned on the vertical support of the ROPS on the right side of the machine.

⚠ WARNING

STRUCTURAL DAMAGE, AN OVERTURN, MODIFICATION, ALTERATION, OR IMPROPER REPAIR CAN IMPAIR THIS STRUCTURE'S PROTECTION CAPABILITY THEREBY VOIDING THIS CERTIFICATION. DO NOT WELD ON OR DRILL HOLES IN THE STRUCTURE. CONSULT A CATERPILLAR DEALER TO DETERMINE THIS STRUCTURE'S LIMITATIONS WITHOUT VOIDING ITS CERTIFICATION.

ROLLOVER (ROPS) AND FALLING OBJECT (FOPS) PROTECTIVE STRUCTURE CERTIFICATION

THIS STRUCTURE, WHEN PROPERLY INSTALLED ON A MACHINE WHICH IS NOT ALTERED TO EXCEED THE CERTIFICATION TEST MASS MEETS, AT THE TIME OF INSTALLATION, CRITERIA ESTABLISHED BY:

**SAE J397 OCT95, SAE J1040 MAY94
ISO 3164:1995, ISO 3471:1994
SAE J231 JAN81, ISO 3449:1992 LEVEL II**

CERTIFICATION TEST MASS:

MODEL NO.	kg	LB
D5N XL, D5N LGP	15 920	35,100

CATERPILLAR INC.
PEORIA, ILLINOIS USA

g01211698

⚠ WARNING

Structural damage, an overturn, modification, alteration, or improper repair, can impair this structure's protective capability thereby voiding this certification. Do not weld on or drill holes in the structure. Consult a Caterpillar dealer to determine this structure's limitations without voiding its certification.

Laser

If your machine is equipped with the AccuGrade - Laser System, this safety message is located on each leg of the tripod for the laser.



g01211700

⚠ WARNING

Movement of the transmitter could cause unexpected blade movement. Death or serious injury could occur. Turn off the transmitter before you move the transmitter or before you adjust the transmitter.

i02424775

Additional Messages

SMCS Code: 7405

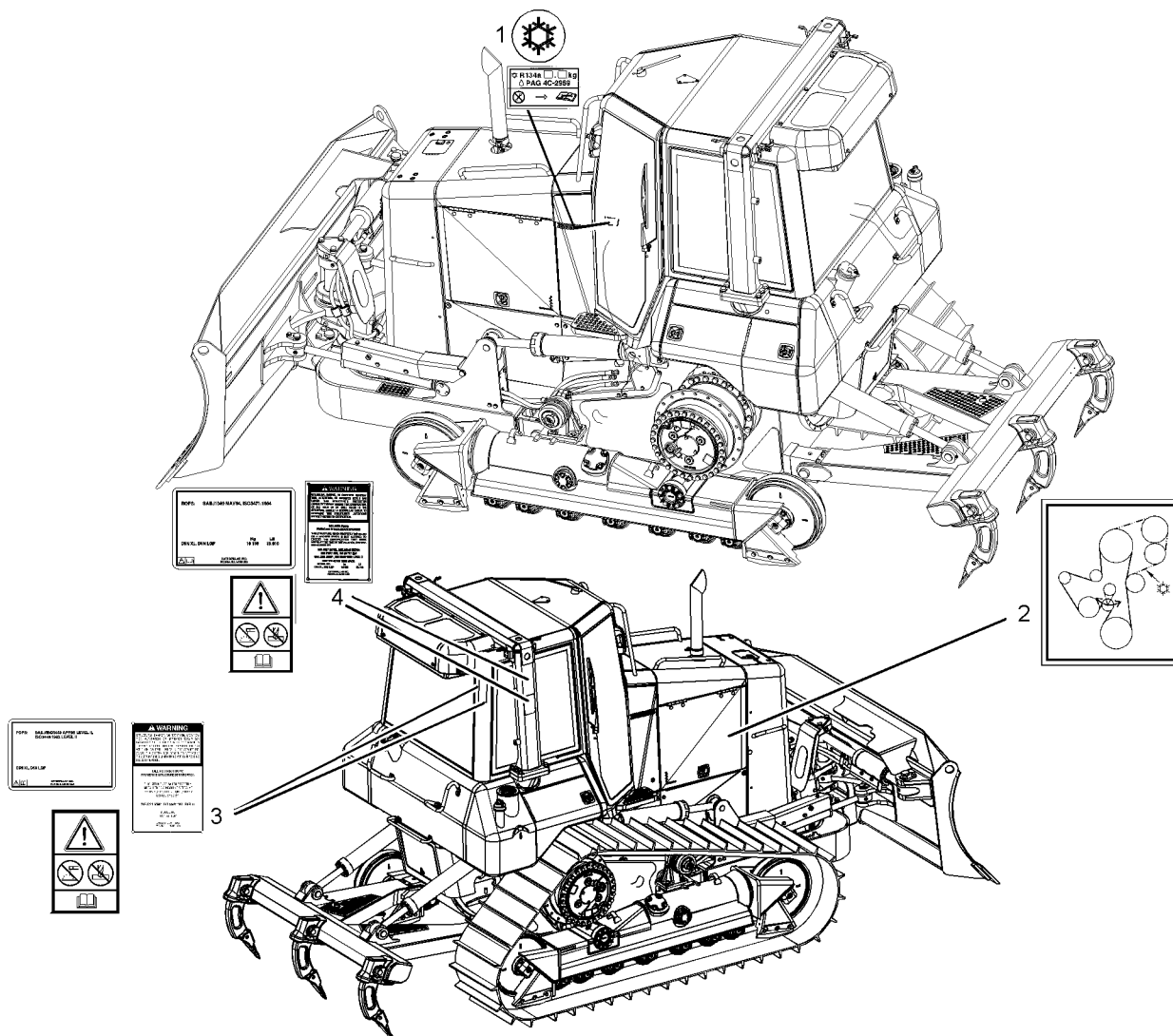


Illustration 12

g01211803

There are several specific messages on this machine. The location of the messages and the description of the messages are reviewed in this section. Please become familiarized with all messages.

Make sure that all of the messages are legible. Clean the messages or replace the messages if you cannot read the words. Replace the illustrations if the illustrations are not legible. When you clean the messages, use a cloth, water and soap. Do not use solvent, gasoline, or other harsh chemicals to clean the messages. Solvents, gasoline, or harsh chemicals could loosen the adhesive that secures the messages. Loose adhesive will allow the messages to fall.

Replace any message that is damaged, or missing. If a message is attached to a part that is replaced, install a message on the replacement part. Any Caterpillar dealer can provide new messages.

Air Conditioner (1)

This safety message is located on the left side of the instrument panel.

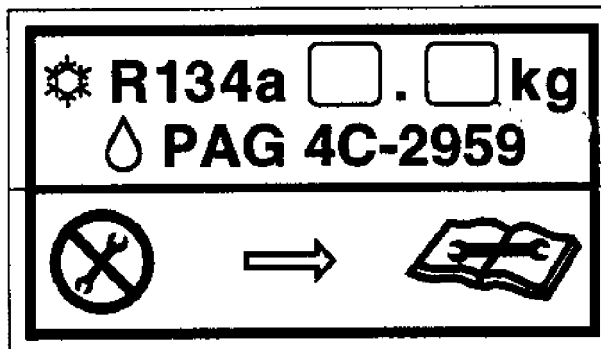


Illustration 13

g01211806

This safety message for the air conditioner has the appropriate information for the following services: the air conditioner lubricant, the refrigerant charge, and the refrigerant capacity.

Read the service manual before you perform any service to the air conditioner.

Belt Mounting (2)

This safety message is located inside the right engine compartment on the upper flange of the alternator guard.

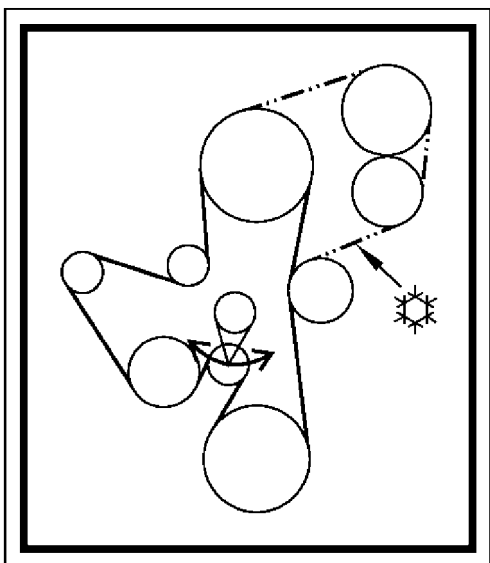


Illustration 14

g01211808

When an air conditioner is present, this message identifies the serpentine belt as the drive belt for the air conditioner compressor also.

- The serpentine belt can be inspected for looseness and fraying.
- The serpentine belt is self-adjusting.

Reference: See Operation and Maintenance Manual, "Maintenance Interval Schedule" for all maintenance recommendations.

Do Not Weld on FOPS (3)

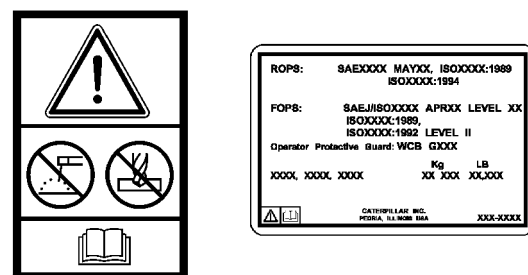


Illustration 15

g01211813

(S/N: AGG903-Up)

(S/N: AKD802-Up)

Safety Message (4) is located on the FOPS.

**WARNING**

STRUCTURAL DAMAGE, AN OVERTURN, MODIFICATION, ALTERATION, OR IMPROPER REPAIR CAN IMPAIR THIS STRUCTURE'S PROTECTION CAPABILITY THEREBY VOIDING THIS CERTIFICATION. DO NOT WELD ON OR DRILL HOLES IN THE STRUCTURE. CONSULT A CATERPILLAR DEALER TO DETERMINE THIS STRUCTURE'S LIMITATIONS WITHOUT VOIDING ITS CERTIFICATION.

**FALLING OBJECT (FOPS)
PROTECTIVE STRUCTURE CERTIFICATION**


THIS STRUCTURE, WHEN PROPERLY INSTALLED ON A MACHINE MEETS, AT THE TIME OF INSTALLATION, CRITERIA ESTABLISHED BY:

SAE J231 JAN81, ISO 3449:1992 LEVEL II

MODEL NO.
D5N XL, LGP

CATERPILLAR INC.
PEORIA, ILLINOIS USA

g01211814

**WARNING**

Structural damage, an overturn, modification, alteration, or improper repair can impair this structure's protection capability thereby voiding this certification. Do not weld on or drill holes in the structure. Consult a Caterpillar dealer to determine this structure's limitations without voiding its certification.

This machine has been certified to the standards that are listed on the certification plate. The maximum mass of the machine, which includes the operator and the attachments without a payload, should not exceed the mass on the certification label.

Do Not Weld on ROPS (4)

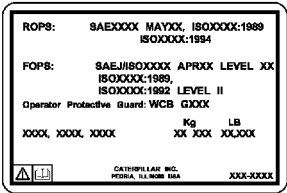



Illustration 16

g01211818

(S/N: AGG903-Up)

(S/N: AKD802-Up)

Safety Message (5) is positioned on the vertical support of the ROPS on the right side of the machine.

**WARNING**

STRUCTURAL DAMAGE, AN OVERTURN, MODIFICATION, ALTERATION, OR IMPROPER REPAIR CAN IMPAIR THIS STRUCTURE'S PROTECTION CAPABILITY THEREBY VOIDING THIS CERTIFICATION. DO NOT WELD ON OR DRILL HOLES IN THE STRUCTURE. CONSULT A CATERPILLAR DEALER TO DETERMINE THIS STRUCTURE'S LIMITATIONS WITHOUT VOIDING ITS CERTIFICATION.

**ROLLOVER (ROPS) AND FALLING OBJECT (FOPS)
PROTECTIVE STRUCTURE CERTIFICATION**

THIS STRUCTURE, WHEN PROPERLY INSTALLED ON A MACHINE WHICH IS NOT ALTERED TO EXCEED THE CERTIFICATION TEST MASS MEETS, AT THE TIME OF INSTALLATION, CRITERIA ESTABLISHED BY:


**SAE J397 OCT95, SAE J1040 MAY94
ISO 3164:1995, ISO 3471:1994
SAE J231 JAN81, ISO 3449:1992 LEVEL II**

CERTIFICATION TEST MASS:

MODEL NO. kg LB
D5N XL, D5N LGP 15 920 35,100

CATERPILLAR INC.
PEORIA, ILLINOIS USA

g01211821

**WARNING**

Structural damage, an overturn, modification, alteration, or improper repair, can impair this structure's protective capability thereby voiding this certification. Do not weld on or drill holes in the structure. Consult a Caterpillar dealer to determine this structure's limitations without voiding its certification.

This machine has been certified to the standards that are listed on the certification plate. The maximum mass of the machine, which includes the operator and the attachments without a payload, should not exceed the mass on the certification label.

Product Link (If equipped)

This safety message is located near the product link module (not shown). The product link module is installed with specific requirements. See your Caterpillar Dealer for proper installation.



g01211824

WARNING

This machine is equipped with a Caterpillar Product Link radio communication device which must be deactivated within 6.0 m (20 ft) of a blast zone. Failure to do so could result in serious injury or death.

i04010649

General Hazard Information

SMCS Code: 7000

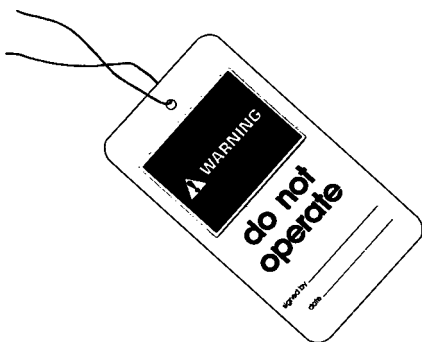


Illustration 17

g00104545

Attach a "Do Not Operate" warning tag or a similar warning tag to the start switch or to the controls. Attach the warning tag before you service the equipment or before you repair the equipment. These warning tags (Special Instruction, SEHS7332) are available from your Cat dealer.

WARNING

Operating the machine while distracted can result in the loss of machine control. Use extreme caution when using any device while operating the machine. Operating the machine while distracted can result in personal injury or death.

Know the width of your equipment in order to maintain proper clearance when you operate the equipment near fences or near boundary obstacles.

Be aware of high voltage power lines and power cables that are buried. If the machine comes in contact with these hazards, serious injury or death may occur from electrocution.

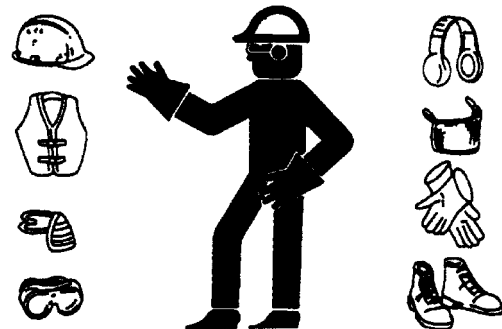


Illustration 18

g00702020

Wear a hard hat, protective glasses, and other protective equipment, as required.

Do not wear loose clothing or jewelry that can snag on controls or on other parts of the equipment.

Make sure that all protective guards and all covers are secured in place on the equipment.

Keep the equipment free from foreign material. Remove debris, oil, tools, and other items from the deck, from walkways, and from steps.

Secure all loose items such as lunch boxes, tools, and other items that are not a part of the equipment.

Know the appropriate work site hand signals and the personnel that are authorized to give the hand signals. Accept hand signals from one person only.

Do not smoke when you service an air conditioner. Also, do not smoke if refrigerant gas may be present. Inhaling the fumes that are released from a flame that contacts air conditioner refrigerant can cause bodily harm or death. Inhaling gas from air conditioner refrigerant through a lighted cigarette can cause bodily harm or death.

Never put maintenance fluids into glass containers. Drain all liquids into a suitable container.

Obey all local regulations for the disposal of liquids.

Use all cleaning solutions with care. Report all necessary repairs.

Do not allow unauthorized personnel on the equipment.

Unless you are instructed otherwise, perform maintenance with the equipment in the servicing position. Refer to Operation and Maintenance Manual for the procedure for placing the equipment in the servicing position.

When you perform maintenance above ground level, use appropriate devices such as ladders or man lift machines. If equipped, use the machine anchorage points and use approved fall arrest harnesses and lanyards.

Pressurized Air and Water

Pressurized air and/or water can cause debris and/or hot water to be blown out. The debris and/or hot water could result in personal injury.

When pressurized air and/or pressurized water is used for cleaning, wear protective clothing, protective shoes, and eye protection. Eye protection includes goggles or a protective face shield.

The maximum air pressure for cleaning purposes must be reduced to 205 kPa (30 psi) when the nozzle is deadheaded and the nozzle is used with an effective chip deflector and personal protective equipment. The maximum water pressure for cleaning purposes must be below 275 kPa (40 psi).

Trapped Pressure

Pressure can be trapped in a hydraulic system. Releasing trapped pressure can cause sudden machine movement or attachment movement. Use caution if you disconnect hydraulic lines or fittings. High-pressure oil that is released can cause a hose to whip. High-pressure oil that is released can cause oil to spray. Fluid penetration can cause serious injury and possible death.

Fluid Penetration

Pressure can be trapped in the hydraulic circuit long after the engine has been stopped. The pressure can cause hydraulic fluid or items such as pipe plugs to escape rapidly if the pressure is not relieved correctly.

Do not remove any hydraulic components or parts until pressure has been relieved or personal injury may occur. Do not disassemble any hydraulic components or parts until pressure has been relieved or personal injury may occur. Refer to the Service Manual for any procedures that are required to relieve the hydraulic pressure.

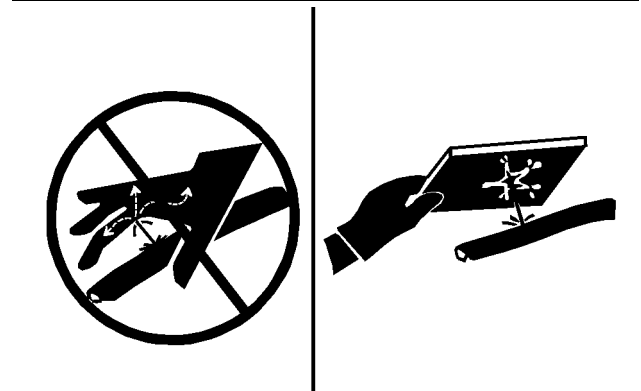


Illustration 19

g00687600

Always use a board or cardboard when you check for a leak. Leaking fluid that is under pressure can penetrate body tissue. Fluid penetration can cause serious injury and possible death. A pin hole leak can cause severe injury. If fluid is injected into your skin, you must get treatment immediately. Seek treatment from a doctor that is familiar with this type of injury.

Containing Fluid Spillage

Care must be taken in order to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the equipment. Prepare to collect the fluid with suitable containers before opening any compartment or disassembling any component that contains fluids.

Refer to Special Publication, NENG2500, "Caterpillar Dealer Service Tool Catalog" for the following items:

- Tools that are suitable for collecting fluids and equipment that is suitable for collecting fluids
- Tools that are suitable for containing fluids and equipment that is suitable for containing fluids

Obey all local regulations for the disposal of liquids.

Inhalation

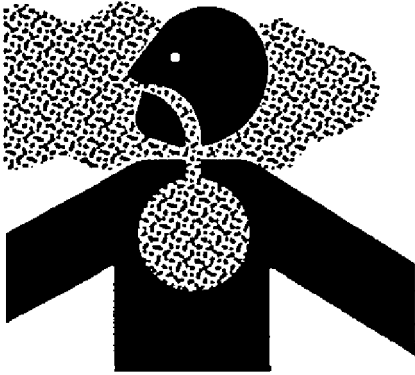


Illustration 20

g02159053

Exhaust

Use caution. Exhaust fumes can be hazardous to your health. If you operate the machine in an enclosed area, adequate ventilation is necessary.

Asbestos Information

Cat equipment and replacement parts that are shipped from Caterpillar are asbestos free. Caterpillar recommends the use of only genuine Cat replacement parts. Use the following guidelines when you handle any replacement parts that contain asbestos or when you handle asbestos debris.

Use caution. Avoid inhaling dust that might be generated when you handle components that contain asbestos fibers. Inhaling this dust can be hazardous to your health. The components that may contain asbestos fibers are brake pads, brake bands, lining material, clutch plates, and some gaskets. The asbestos that is used in these components is bound in a resin or sealed in some way. Normal handling is not hazardous unless airborne dust that contains asbestos is generated.

If dust that may contain asbestos is present, there are several guidelines that should be followed:

- Never use compressed air for cleaning.
- Avoid brushing materials that contain asbestos.
- Avoid grinding materials that contain asbestos.
- Use a wet method in order to clean up asbestos materials.
- A vacuum cleaner that is equipped with a high efficiency particulate air filter (HEPA) can also be used.

- Use exhaust ventilation on permanent machining jobs.
- Wear an approved respirator if there is no other way to control the dust.
- Comply with applicable rules and regulations for the work place. In the United States, use Occupational Safety and Health Administration (OSHA) requirements. These OSHA requirements can be found in "29 CFR 1910.1001".
- Obey environmental regulations for the disposal of asbestos.
- Stay away from areas that might have asbestos particles in the air.

Dispose of Waste Properly

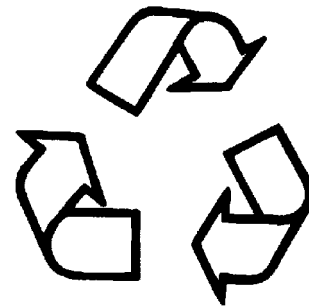


Illustration 21

g00706404

Improperly disposing of waste can threaten the environment. Potentially harmful fluids should be disposed of according to local regulations.

Always use leakproof containers when you drain fluids. Do not pour waste onto the ground, down a drain, or into any source of water.

i01359664

Crushing Prevention and Cutting Prevention

SMCS Code: 7000

Support the equipment properly before you perform any work or maintenance beneath that equipment. Do not depend on the hydraulic cylinders to hold up the equipment. Equipment can fall if a control is moved, or if a hydraulic line breaks.

Do not work beneath the cab of the machine unless the cab is properly supported.

Unless you are instructed otherwise, never attempt adjustments while the machine is moving or while the engine is running.

Never jump across the starter solenoid terminals in order to start the engine. Unexpected machine movement could result.

Whenever there are equipment control linkages the clearance in the linkage area will change with the movement of the equipment or the machine. Stay clear of areas that may have a sudden change in clearance with machine movement or equipment movement.

Stay clear of all rotating and moving parts.

If it is necessary to remove guards in order to perform maintenance, always install the guards after the maintenance is performed.

Keep objects away from moving fan blades. The fan blade will throw objects or cut objects.

Do not use a kinked wire cable or a frayed wire cable. Wear gloves when you handle wire cable.

When you strike a retainer pin with force, the retainer pin can fly out. The loose retainer pin can injure personnel. Make sure that the area is clear of people when you strike a retainer pin. To avoid injury to your eyes, wear protective glasses when you strike a retainer pin.

Chips or other debris can fly off an object when you strike the object. Make sure that no one can be injured by flying debris before striking any object.

i01329099

Burn Prevention

SMCS Code: 7000

Do not touch any part of an operating engine. Allow the engine to cool before any maintenance is performed on the engine. Relieve all pressure in the air system, in the oil system, in the lubrication system, in the fuel system, or in the cooling system before any lines, fittings or related items are disconnected.

Coolant

When the engine is at operating temperature, the engine coolant is hot. The coolant is also under pressure. The radiator and all lines to the heaters or to the engine contain hot coolant.

Any contact with hot coolant or with steam can cause severe burns. Allow cooling system components to cool before the cooling system is drained.

Check the coolant level only after the engine has been stopped.

Ensure that the filler cap is cool before removing the filler cap. The filler cap must be cool enough to touch with a bare hand. Remove the filler cap slowly in order to relieve pressure.

Cooling system conditioner contains alkali. Alkali can cause personal injury. Do not allow alkali to contact the skin, the eyes, or the mouth.

Oils

Hot oil and hot components can cause personal injury. Do not allow hot oil to contact the skin. Also, do not allow hot components to contact the skin.

Remove the hydraulic tank filler cap only after the engine has been stopped. The filler cap must be cool enough to touch with a bare hand. Follow the standard procedure in this manual in order to remove the hydraulic tank filler cap.

Batteries

Electrolyte is an acid. Electrolyte can cause personal injury. Do not allow electrolyte to contact the skin or the eyes. Always wear protective glasses for servicing batteries. Wash hands after touching the batteries and connectors. Use of gloves is recommended.

i04090611

Fire Prevention and Explosion Prevention

SMCS Code: 7000



Illustration 22

g00704000

General

All fuels, most lubricants, and some coolant mixtures are flammable.

To minimize the risk of fire or explosion, Caterpillar recommends the following actions.

Always perform a Walk-Around Inspection, which may help you identify a fire hazard. Do not operate a machine when a fire hazard exists. Contact your Cat dealer for service.

Understand the use of the primary exit and alternative exit on the machine. Refer to Operation and Maintenance Manual, "Alternative Exit".

Do not operate a machine with a fluid leak. Repair leaks and clean up fluids before resuming machine operation. Fluids that are leaking or spilled onto hot surfaces or onto electrical components can cause a fire. A fire may cause personal injury or death.

Remove flammable material such as leaves, twigs, papers, trash, and so on. These items may accumulate in the engine compartment or around other hot areas and hot parts on the machine.

Keep the access doors to major machine compartments closed and access doors in working condition in order to permit the use of fire suppression equipment, in case a fire should occur.

Clean all accumulations of flammable materials such as fuel, oil, and debris from the machine.

Do not operate the machine near any flame.

Keep shields in place. Exhaust shields (if equipped) protect hot exhaust components from oil spray or fuel spray in case of a break in a line, in a hose, or in a seal. Exhaust shields must be installed correctly.

Do not weld or flame cut on tanks or lines that contain flammable fluids or flammable material. Empty and purge the lines and tanks. Then clean the lines and tanks with a nonflammable solvent prior to welding or flame cutting. Ensure that the components are properly grounded in order to avoid unwanted arcs.

Dust that is generated from repairing nonmetallic hoods or fenders may be flammable and/or explosive. Repair such components in a well ventilated area away from open flames or sparks. Use suitable Personal Protection Equipment (PPE).

Inspect all lines and hoses for wear or deterioration. Replace damaged lines and hoses. The lines and the hoses should have adequate support and secure clamps. Tighten all connections to the recommended torque. Damage to the protective cover or insulation may provide fuel for fires.

Store fuels and lubricants in properly marked containers away from unauthorized personnel. Store oily rags and flammable materials in protective containers. Do not smoke in areas that are used for storing flammable materials.



Illustration 23

g00704059

Use caution when you are fueling a machine. Do not smoke while you are fueling a machine. Do not fuel a machine near open flames or sparks. Always stop the engine before fueling. Fill the fuel tank outdoors. Properly clean areas of spillage.

Follow practices for safe fueling that are described in the "Operation" section of the Operation and Maintenance Manual section and follow local regulations. Never store flammable fluids in the operator compartment of the machine.

Battery and Battery Cables



Illustration 24

g02298225

Caterpillar recommends the following in order to minimize the risk of fire or an explosion related to the battery.

Do not operate a machine if battery cables or related parts show signs of wear or damage. Contact your Cat dealer for service.

Follow safe procedures for engine starting with jump-start cables. Improper jumper cable connections can cause an explosion that may result in injury. Refer to Operation and Maintenance Manual, "Engine Starting with Jump Start Cables" for specific instructions.

Do not charge a frozen battery. This may cause an explosion.

Gases from a battery can explode. Keep any open flames or sparks away from the top of a battery. Do not smoke in battery charging areas.

Never check the battery charge by placing a metal object across the terminal posts. Use a voltmeter in order to check the battery charge.

Daily inspect battery cables that are in areas that are visible. Inspect cables, clips, straps, and other restraints for damage. Replace any damaged parts. Check for signs of the following, which can occur over time due to use and environmental factors:

- Fraying
- Abrasion
- Cracking

- Discoloration
- Cuts on the insulation of the cable
- Fouling
- Corroded terminals, damaged terminals, and loose terminals

Replace damaged battery cable(s) and replace any related parts. Eliminate any fouling, which may have caused insulation failure or related component damage or wear. Ensure that all components are reinstalled correctly.

An exposed wire on the battery cable may cause a short to ground if the exposed area comes into contact with a grounded surface. A battery cable short produces heat from the battery current, which may be a fire hazard.

An exposed wire on the ground cable between the battery and the disconnect switch may cause the disconnect switch to be bypassed if the exposed area comes into contact with a grounded surface. This may result in an unsafe condition for servicing the machine. Repair components or replace components before servicing the machine.

WARNING

Fire on a machine can result in personal injury or death. Exposed battery cables that come into contact with a grounded connection can result in fires. Replace cables and related parts that show signs of wear or damage. Contact your Cat dealer.

Wiring

Check electrical wires daily. If any of the following conditions exist, replace parts before you operate the machine.

- Fraying
- Signs of abrasion or wear
- Cracking
- Discoloration
- Cuts on insulation
- Other damage

Make sure that all clamps, guards, clips, and straps are reinstalled correctly. This will help to prevent vibration, rubbing against other parts, and excessive heat during machine operation.

Attaching electrical wiring to hoses and tubes that contain flammable fluids or combustible fluids should be avoided.

Consult your Cat dealer for repair or for replacement parts.

Keep wiring and electrical connections free of debris.

Lines, Tubes, and Hoses

Do not bend high-pressure lines. Do not strike high-pressure lines. Do not install any lines that are bent or damaged. Use the appropriate backup wrenches in order to tighten all connections to the recommended torque.

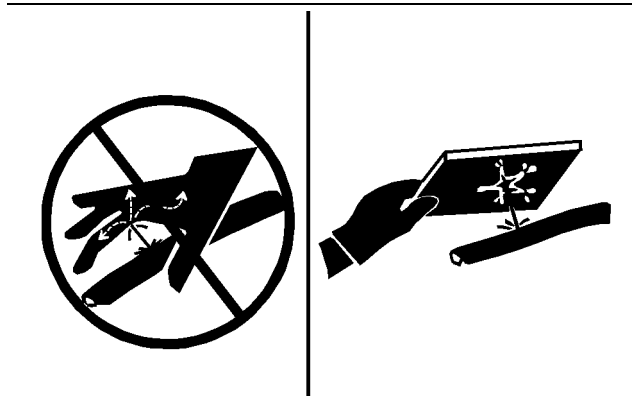


Illustration 25

g00687600

Check lines, tubes, and hoses carefully. Wear Personal Protection Equipment (PPE) in order to check for leaks. Always use a board or cardboard when you check for a leak. Leaking fluid that is under pressure can penetrate body tissue. Fluid penetration can cause serious injury and possible death. A pin hole leak can cause severe injury. If fluid is injected into your skin, you must get treatment immediately. Seek treatment from a doctor that is familiar with this type of injury.

Replace the affected parts if any of the following conditions are present:

- End fittings are damaged or leaking.
- Outer coverings are chafed or cut.
- Wires are exposed.
- Outer coverings are swelling or ballooning.
- Flexible parts of the hoses are kinked.
- Outer covers have exposed embedded armoring.
- End fittings are displaced.

Make sure that all clamps, guards, and heat shields are installed correctly. During machine operation, this will help to prevent vibration, rubbing against other parts, excessive heat, and failure of lines, tubes, and hoses.

Do not operate a machine when a fire hazard exists. Repair any lines that are corroded, loose, or damaged. Leaks may provide fuel for fires. Consult your Cat dealer for repair or for replacement parts. Use genuine Cat parts or the equivalent, for capabilities of both the pressure limit and temperature limit.

Ether

Ether (if equipped) is commonly used in cold-weather applications. Ether is flammable and poisonous.

Follow the correct cold engine starting procedures. Refer to the section in the Operation and Maintenance Manual with the label "Engine Starting".

Do not spray ether manually into an engine if the machine is equipped with a thermal starting aid for cold weather starting.

Use ether in well ventilated areas. Do not smoke while you are replacing an ether cylinder or while you are using an ether spray.

Do not store ether cylinders in living areas or in the operator compartment of a machine. Do not store ether cylinders in direct sunlight or in temperatures above 49° C (120.2° F). Keep ether cylinders away from open flames or sparks.

Dispose of used ether cylinders properly. Do not puncture an ether cylinder. Keep ether cylinders away from unauthorized personnel.

Fire Extinguisher

As an additional safety measure, keep a fire extinguisher on the machine.

Be familiar with the operation of the fire extinguisher. Inspect the fire extinguisher and service the fire extinguisher regularly. Follow the recommendations on the instruction plate.

Consider installation of an aftermarket Fire Suppression System, if the application and working conditions warrant the installation.

i01834364

Fire Extinguisher Location

SMCS Code: 7419

Make sure that a fire extinguisher is available. Be familiar with the operation of the fire extinguisher. Inspect the fire extinguisher and service the fire extinguisher. Obey the recommendations on the instruction plate.

Mount the fire extinguisher in the accepted location per local regulations.

Do not weld the ROPS structure in order to install the fire extinguisher. Also, do not drill holes in the ROPS structure in order to mount the fire extinguisher on the ROPS.

Strap the mounting plate to a leg of the ROPS in order to mount the fire extinguisher, as needed. If the weight of the fire extinguisher exceeds 4.5 kg (10 lb), mount the fire extinguisher near the bottom of the ROPS. Do not mount the fire extinguisher at the upper one-third area of the ROPS.

Consult your Caterpillar dealer for the proper procedure for mounting the fire extinguisher.

i01329108

Track Information

SMCS Code: 7000

Track adjusting systems use either grease or oil under high pressure to keep the track under tension.

Grease or oil under high pressure coming out of the relief valve can penetrate the body causing injury or death. Do not watch the relief valve to see if grease or oil is escaping. Watch the track or track adjustment cylinder to see if the track is being loosened.

The pins and bushings in a dry track pin joint can become very hot. It is possible to burn the fingers if there is more than brief contact with these components.

i01122596

Electrical Storm Injury Prevention

SMCS Code: 7000

When lightning is striking in the vicinity of the machine, the operator should never attempt the following procedures:

- Mount the machine.
- Dismount the machine.

If you are in the operator's station during an electrical storm, stay in the operator's station. If you are on the ground during an electrical storm, stay away from the vicinity of the machine.

i01896223

Before Starting Engine

SMCS Code: 1000; 7000

Start the engine only from the operator's compartment. Do not short across the battery terminals and do not short across the batteries. Bypassing the engine neutral start system can damage the electrical system.

Inspect the condition of the seat belt and mounting hardware. Replace any damaged parts or worn parts. Regardless of appearance, replace the seat belt after three years of use. Do not use an extension for a seat belt on a retractable seat belt.

Adjust the seat so that full pedal travel can be achieved. Make sure that the operator's back is against the back of the seat.

Make sure that the machine is equipped with a lighting system that is adequate for the job conditions. Make sure that all lights are working properly. Before you start the engine or before you move the machine, make sure that no one is working on the machine, working underneath the machine or working close to the machine. Make sure that the area is free of personnel.

i02412758

Engine Starting

SMCS Code: 1000; 7000

If a warning tag is attached to the start switch or attached to the controls, do not start the engine. Also, do not move any controls.

Move all hydraulic controls to the HOLD position before starting the engine. Move the transmission control to NEUTRAL position.

Engage the parking brake switch.

Diesel engine exhaust contains products of combustion. These products can be harmful to your health. Always start the engine and always operate the engine in a well ventilated area. If you are in an enclosed area, vent the exhaust to the outside.

Air Inlet Heater

Use the following procedure to start the engine.

WARNING

This machine is equipped with an air inlet heater (AIH) for cold weather starting. Do not use aerosol can types of starting aids such as ether. Such use could result in an explosion and personal injury.

An air inlet heater is installed in the air inlet manifold. The air inlet heater is an electrical device which provides heated inlet air for cold weather starting.

Note: Startability is improved at temperatures below 16°C (60°F) with the air inlet heater. This helps reduce white smoke and misfire during start-up in cold weather.

The operation of the air inlet heater is fully automatic on the 3126B Engine that is installed in the D6N Track-Type Tractor. The Engine ECM controls the inputs according to the prevailing condition.

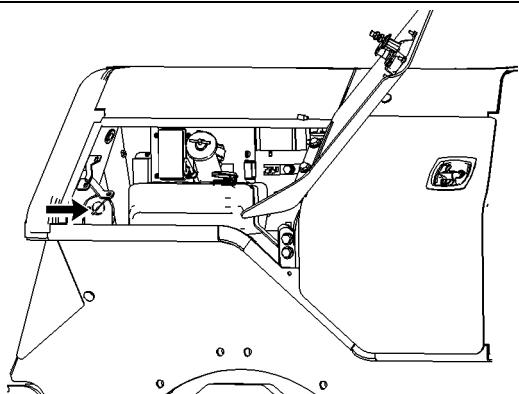


Illustration 26

g00926403

1. Turn the battery disconnect switch to the ON position. The battery disconnect switch is inside the access door that is on the left side of the machine.

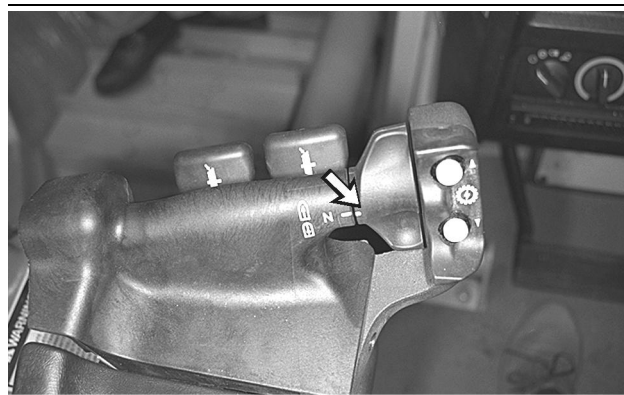


Illustration 27

g00100360

Finger Tip Control (NEUTRAL)

2. Verify that the transmission direction control lever is in the NEUTRAL position.

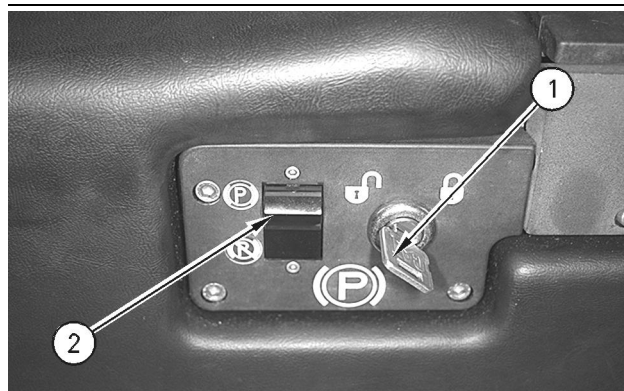


Illustration 28

g00100361

3. Use parking brake switch key (1) in order to operate the parking brake. Engage parking brake switch (2).

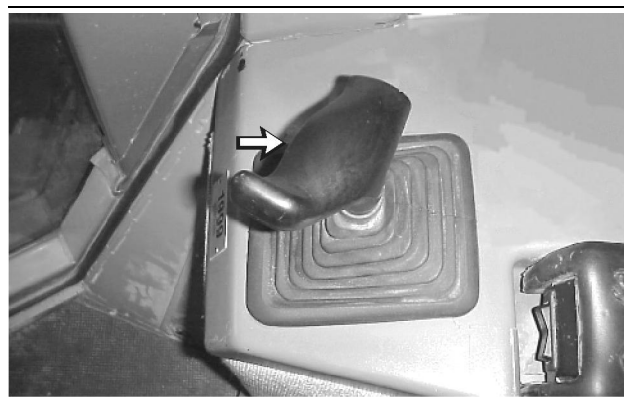


Illustration 29

g00861458

Implement lever with implement control linkage (HOLD)
D5NFTC (S/N: AGG1-902; AKD1-800)
D6N FTC(S/N: ALH1-398; ALR1-377)

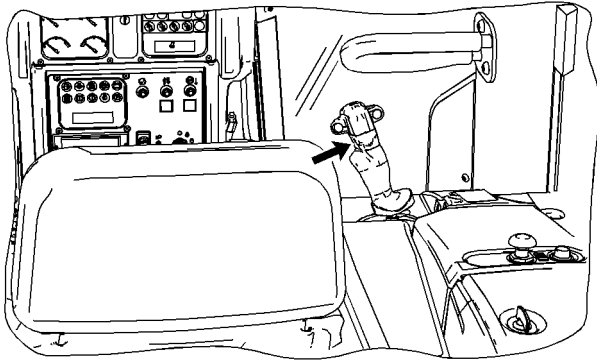


Illustration 30

g01061586

Implement lever with hydraulic pilot control (HOLD)

D5NFTC (S/N: AGG903-Up; AKD801-Up)

D6N FTC(S/N: ALH399-Up; ALR378-Up)

4. Verify that the implement control levers are in the HOLD position.

NOTICE

Do not engage the starting motor when flywheel is turning. Do not start the engine under load.

If the engine fails to start within 30 seconds, release the starter switch or button and wait two minutes to allow the starting motor to cool before attempting to start the engine again.

5. Turn the engine start switch key to the ON position. The system performs an automatic self-diagnosis. When you turn on the engine start switch key the test is performed. If the test is complete without any faults, proceed to the next step. If the system detects a fault, check the electrical system. Complete all of the necessary repairs before you start the engine.



Air inlet heater starting aid

6. The indicator for the air inlet heater is positioned on the upper digital display window. The indicator for the air inlet heater will come on during the next cycle before engine start-up.
 - a. When the indicator light is on, the air inlet heater is in the ON position or in the preheat cycle. Do not attempt to start or crank the engine until the light turns off.
 - b. When the indicator light goes off, turn the engine start switch key to the start position in order to start the engine.

7. Turn the engine start switch key to the START position. Crank the engine. When the engine starts, release the engine start switch key.

NOTICE

If the engine start key switch is turned to the OFF position before the engine is started, or if the engine does not start, allow the air inlet heater to cool for two minutes before the next attempt to start the engine.

Do not crank the engine for more than 30 seconds. Allow the starter to cool for two minutes before cranking the engine again. Turbocharger damage can result if the engine speed is not kept low until the engine oil indicator light or the engine oil gauge verifies that there is sufficient oil pressure.

8. Allow the engine to idle for three to five minutes, or allow the engine to idle until the water temperature indicator begins to rise. The engine should run at low idle smoothly before increasing to high idle. Allow the white smoke to disperse before proceeding with normal operation.
9. Operate the engine at low load until all systems reach operating temperature. Check the gauges during the warm-up period.

When you are starting the engine at temperatures below -18°C (0°F), the use of additional cold weather starting aids is recommended. A coolant heater, a fuel heater, an oil heater, or extra battery capacity may be required.

Reference: Before you start the engine at temperatures below -23°C (-10°F), consult your Caterpillar dealer or refer to Special Publication, SEBU5898, "Cold Weather Recommendations".

i01963896

Before Operation

SMCS Code: 7000

Clear all personnel from the machine and from the area.

Remove all obstacles from the path of the machine. Beware of hazards such as wires, ditches, etc.

Be sure that all windows are clean. Secure the doors and the windows in either the open position or the shut position.

Adjust the rearview mirrors (if equipped) for best vision close to the machine. Make sure that the machine horn, the backup alarm (if equipped) and all other warning devices are working properly.

Reference: Refer to Operation and Maintenance Manual, "Daily Inspection" in this manual.

Fasten the seat belt securely.

i03721461

Operation

SMCS Code: 7000

Machine Operating Temperature Range

The standard machine configuration is intended for use within an ambient temperature range of -40°C (-40°F) to 50°C (122°F). Special configurations for different ambient temperatures may be available. Consult your Caterpillar dealer for additional information on special configurations of your machine.

Operation

Only operate the machine while you are in a seat. The seat belt must be fastened while you operate the machine. Only operate the controls while the engine is running.

Check for proper operation of all controls and protective devices while you operate the machine slowly in an open area.

Before you move the machine, make sure that no one will be endangered.

Do not allow riders on the machine unless the machine has the following equipment:

- additional seat
- additional seat belt
- Rollover Protective Structure (ROPS)

Never use the work tool for a work platform.

Note any needed repairs during machine operation. Report any needed repairs.

Carry attachments close to the ground, approximately 40 cm (15 inches) higher than ground level. Do not go close to the edge of a cliff, an excavation, or an overhang.

If the machine begins to sideslip, perform the following procedure:

- Discard the load.

- Turn the machine downhill.

Be careful to avoid any condition which could lead to tipping. Tipping can occur when you work on hills, banks and slopes. Also, tipping can occur when you cross ditches, ridges or other unexpected obstructions.

Whenever it is possible, operate the machine up the slopes and down the slopes. Avoid operating the machine across the slope, when possible.

Keep the machine under control. Do not overload the machine beyond capacity.

Be sure that the towing devices are adequate.

Never straddle a wire cable or allow other personnel to straddle a wire cable.

Know the maximum dimensions of your machine.

Always keep the Rollover Protective Structure (ROPS) installed during machine operation.

i03860832

Parking

SMCS Code: 7000

Park on a level surface. If you must park on a grade, use blocks to prevent the machine from rolling.

Apply the service brake in order to stop the machine. Move the transmission control to NEUTRAL position and the speed control to LOW IDLE position.

Engage the parking brake switch.

Lower all attachments to the ground. Activate any control locks.

Stop the engine.

Turn the engine start switch key to OFF position and remove the key.

Always turn the battery disconnect switch to the OFF position before leaving the machine.

If the machine will not be operated for a month or more, remove the battery disconnect switch key.

i02624835

Engine Stopping

SMCS Code: 1000; 7000

Do not stop the engine immediately after the machine has been operated under load. This can cause overheating and accelerated wear of engine components.

After the machine is parked and the parking brake is engaged, allow the engine to run for two minutes before shutdown. This allows hot areas of the engine to cool gradually.

i01329161

Equipment Lowering with Engine Stopped

SMCS Code: 7000

Before lowering any equipment with the engine stopped, clear the area around the equipment of all personnel. The procedure to use will vary with the type of equipment to be lowered. Keep in mind most systems use a high pressure fluid or air to raise or lower equipment. The procedure will cause high pressure air, hydraulic, or some other media to be released in order to lower the equipment. Wear appropriate personal protective equipment and follow the established procedure in the Operation and Maintenance Manual, "Equipment Lowering with Engine Stopped" in the Operation Section of the manual.

i02399549

Sound Information and Vibration Information

SMCS Code: 7000

The measurement for operator sound pressure level L_{eq} was obtained with the procedures that are specified in "ANSI/SAE J1166 OCT 98". The procedure specifies the requirements of the work cycle to use while the measurement is obtained. The operator sound pressure level is 84 dBA for the cab that is offered by Caterpillar. This reading is correct under the following conditions: proper installation of the cab, proper maintenance of the cab, closed cab doors, and closed cab windows.

Hearing protection may be needed during operation with an open operator station. Hearing protection may be needed during operation with a cab that has not been maintained properly. Hearing protection may be needed during operation with open doors or with open windows.

The exterior sound pressure level for the standard machine is 84 dBA. This measurement was obtained with the test procedures that are specified in "SAE J88 Jun 86". The measurement was obtained under the following conditions: distance of 15 m (49.2 ft), machine in middle speed range, and moving.

Sound Performance for Machines that are Offered in European Union Countries and in Countries with the EU Directives

The operator sound pressure level is 76 dBA. The measurement was taken according to the static test procedure and conditions that are specified in "ISO 6394:1998".

The labeled sound power level for this machine was measured according to the test procedure and conditions specified in "2000/14/EC" for a fan drive with continuous variable speed. The labeled sound power level is measured at 70 percent of maximum speed.

Vibration Level

The hands and arms are exposed to a weighted root mean square acceleration that is less than 2.5 m/s^2 .

The whole body is exposed to a weighted root mean square acceleration of 0.6 m/s^2 .

Measurements are obtained on a representative machine that is using the procedures that are in the following standards:

- "ISO 2631/1"
- "ISO 5349"
- "SAE J1166"

Cab Internal Clearance

If a machine is equipped with a cab, the position of the operator conforms to industry standards. These standards are "SAE J154" and "ISO 3411". An item should not protrude into the space of the cab. The following items should not protrude into the cab.

- Radio

- Fire extinguisher
- Lunch box

Objects in the cab should be secured. The objects must remain in place during operations in rough terrain. The objects must remain in place during a rollover of the machine.

i03634321

Operator Station

SMCS Code: 7000

Any modifications to the inside of the operator station should not project into the operator space or into the space for the companion seat (if equipped). The addition of a radio, fire extinguisher, and other equipment must be installed so that the defined operator space and the space for the companion seat (if equipped) is maintained. Any item that is brought into the cab should not project into the defined operator space or the space for the companion seat (if equipped). A lunch box or other loose items must be secured. Objects must not pose an impact hazard in rough terrain or in the event of a rollover.

i03656846

Guards (Operator Protection)

SMCS Code: 7000; 7150; 7325

There are different types of guards that are used to protect the operator. The machine and the machine application determines the type of guard that should be used.

A daily inspection of the guards is required in order to check for structures that are bent, cracked or loose. Never operate a machine with a damaged structure.

The operator becomes exposed to a hazardous situation if the machine is used improperly or if poor operating techniques are used. This situation can occur even though a machine is equipped with an appropriate protective guard. Follow the established operating procedures that are recommended for your machine.

Rollover Protective Structure (ROPS), Falling Object Protective Structure (FOPS) or Tip Over Protection Structure (TOPS)

The ROPS/FOPS Structure (if equipped) on your machine is specifically designed, tested and certified for that machine. Any alteration or any modification to the ROPS/FOPS Structure could weaken the structure. This places the operator into an unprotected environment. Modifications or attachments that cause the machine to exceed the weight that is stamped on the certification plate also place the operator into an unprotected environment. Excessive weight may inhibit the brake performance, the steering performance and the ROPS. The protection that is offered by the ROPS/FOPS Structure will be impaired if the ROPS/FOPS Structure has structural damage. Damage to the structure can be caused by an overturn, a falling object, a collision, etc.

Do not mount items (fire extinguishers, first aid kits, work lights, etc) by welding brackets to the ROPS/FOPS Structure or by drilling holes in the ROPS/FOPS Structure. Welding brackets or drilling holes in the ROPS/FOPS Structures can weaken the structures. Consult your Caterpillar dealer for mounting guidelines.

The Tip Over Protection Structure (TOPS) is another type of guard that is used on mini hydraulic excavators. This structure protects the operator in the event of a tipover. The same guidelines for the inspection, the maintenance and the modification of the ROPS/FOPS Structure are required for the Tip Over Protection Structure.

Other Guards (If Equipped)

Protection from flying objects and/or falling objects is required for special applications. Logging applications and demolition applications are two examples that require special protection.

A front guard needs to be installed when a work tool that creates flying objects is used. Mesh front guards that are approved by Caterpillar or polycarbonate front guards that are approved by Caterpillar are available for machines with a cab or an open canopy. On machines that are equipped with cabs, the windows should also be closed. Safety glasses are recommended when flying hazards exist for machines with cabs and machines with open canopies.

If the work material extends above the cab, top guards and front guards should be used. Typical examples of this type of application are listed below:

- Demolition applications

-
- Rock quarries
 - Forestry products

Additional guards may be required for specific applications or work tools. The Operation and Maintenance Manual for your machine or your work tool will provide specific requirements for the guards. Consult your Caterpillar dealer for additional information.

Product Information Section

General Information

i01815795

Specifications

SMCS Code: 1000; 7000

The basic machine specifications are listed below.

Table 1

D5N FTC XL Track-Type Tractor	
Shipping Weight ⁽¹⁾	12541 kg (27647 lb)
Operating Weight ⁽²⁾	12818 kg (28258 lb)
Operating Weight with Ripper (three teeth)	13824 kg (30476 lb)
Length of Machine	3544 mm (11.6 ft)
Length of Machine with VPAT Bulldozer blade	4555 mm (14.9 ft)
Length of Machine with VPAT Bulldozer blade and Ripper	5373 mm (17.6 ft)
Width of Machine across Tracks	2330 mm (7.7 ft)
Height of Machine with OROPS	2992 mm (9.8 ft)
Height of Machine with EROPS	2995 mm (9.8 ft)

⁽¹⁾ The machine shipping weight includes the EROPS (cab), the air cleaner, the lights, the Power Angle Tilt blade, the powershift transmission arrangement, the drawbar, the fuel tank, the radiator guards, the engine enclosure, the four-valve hydraulic control, the ES track, the lubricants, the coolant, and 5% fuel.

⁽²⁾ Shipping weight plus an operator and a full fuel tank

Table 2

D5N FTC LGP Track-Type Tractor	
Shipping Weight ⁽¹⁾	12975 kg (28606 lb)
Operating Weight ⁽²⁾	13252 kg (29217 lb)
Operating Weight with Ripper (three teeth)	14258 kg (31435 lb)
Length of Machine	3720 mm (12.3 ft)
Length of Machine with VPAT Bulldozer blade	5064 mm (16.5 ft)
Length of Machine with VPAT Bulldozer blade and Ripper	5882 mm (19.3 ft)
Width of Machine across Tracks	2760 mm (9.1 ft)
Height of Machine with OROPS	3036 mm (10.0 ft)
Height of Machine with EROPS	3039 mm (10.0 ft)

⁽¹⁾ The machine shipping weight includes the EROPS (cab), the air cleaner, the lights, the Power Angle Tilt blade, the powershift transmission arrangement, the drawbar, the fuel tank, the radiator guards, the engine enclosure, the four-valve hydraulic control, the ES track, the lubricants, the coolant, and 5% fuel.

⁽²⁾ Shipping weight plus an operator and a full fuel tank

Identification Information

i02063047

Plate Locations and Film Locations

SMCS Code: 1000; 7000

The Product Identification Number (PIN) will be used to identify a powered machine that is designed for an operator to ride.

Caterpillar products such as engines, transmissions and major attachments that are not designed for an operator to ride are identified by Serial Numbers.

For quick reference, record the identification numbers in the spaces that are provided below the illustration.

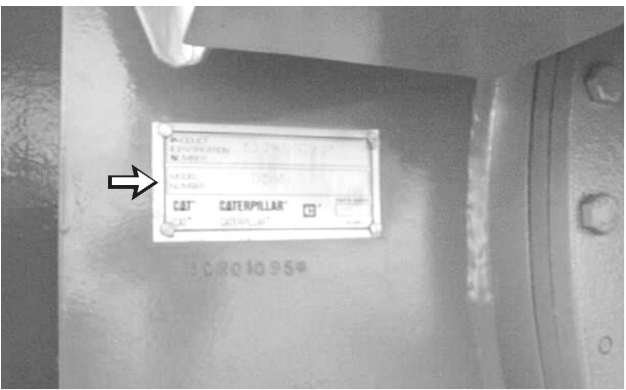


Illustration 31

g00650398

The machine PIN is located at the rear of the machine on the left side of the transmission housing.

Machine PIN _____



Illustration 32

g00650411

The service information number plate (SIN) is located behind the seat of the machine.

Service Information Number Plate (SIN) _____



Illustration 33

g00863172

The serial number plate for the transmission is located at the rear of the machine to the right of the transmission housing.

Transmission Serial Number _____



Illustration 34

g00860883

The engine serial number is located on top of the engine valve cover.

Engine Serial Number _____

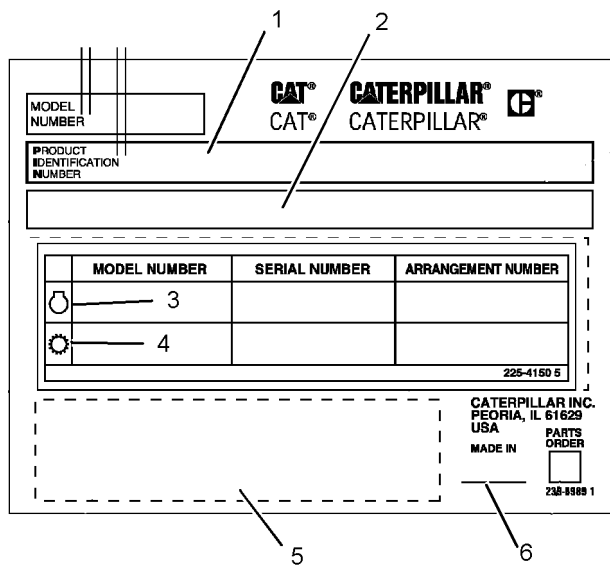


Illustration 35
D5N(S/N: AGG903-Up)
D5N(S/N: AKD801-Up)

- PIN (1) _____
- Bar code (2) _____
- Engine Serial Number (3) _____
- Transmission Serial Number (4) _____
- CE plate (5) _____
- Country of Manufacture (6) _____

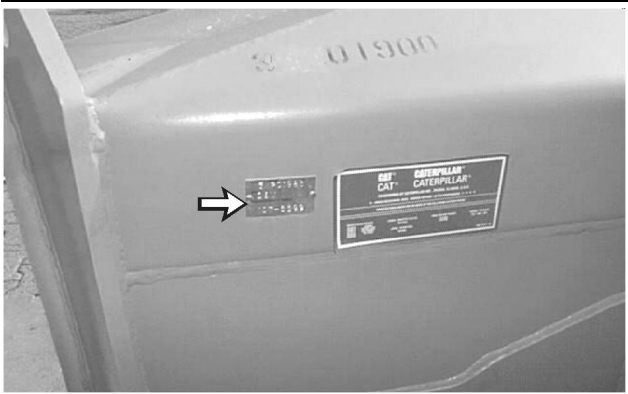


Illustration 36
g00650427

The serial number plate for the bulldozer is located at the rear of the bulldozer on the left side.

Bulldozer Serial Number _____

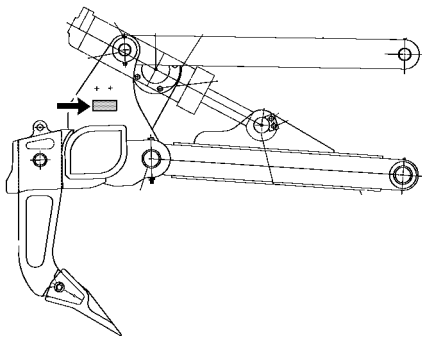


Illustration 37
g00942536

Ripper Serial Number _____

The serial number plate for the ripper is located on the right tower of the ripper carriage.

Mark for European Union

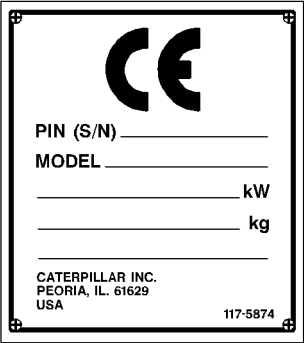


Illustration 38
g00039984

- PIN _____
- Model _____
- Power (kW) _____
- Weight (kg) _____

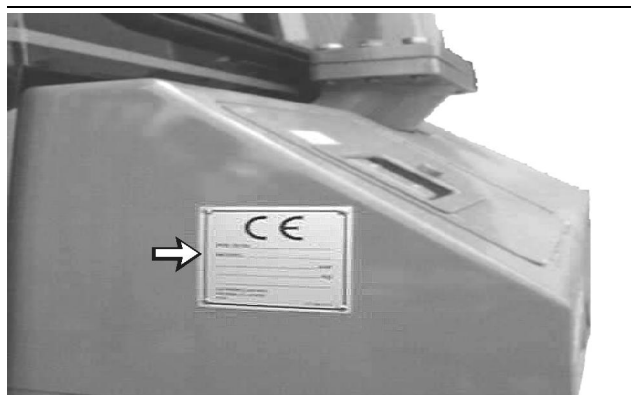


Illustration 39

g00650430

This plate is positioned on the front side of the left fender.

Note: This plate is on machines that are going into the European Union.

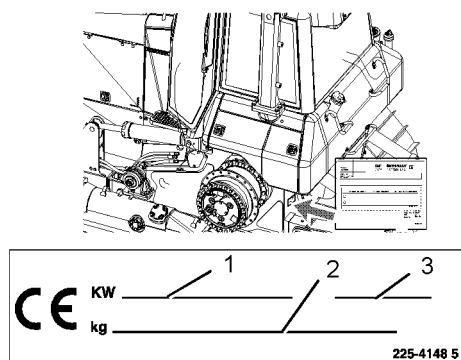


Illustration 40

g01057231

D5N(S/N: AGG903-Up)

D5N(S/N: AKD801-Up)

- Power (1) (kW) _____
- Weight (2) (kg) _____
- Date of Manufacture (3) (Year) _____

The CE plate is located on the PIN Plate. See illustration 35.

Certification

Protective structure certifications are located on the machine.

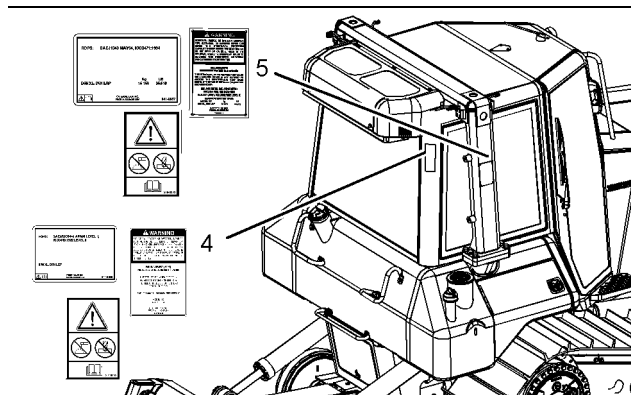


Illustration 41

g01057492

Structure certification FOPS (4)

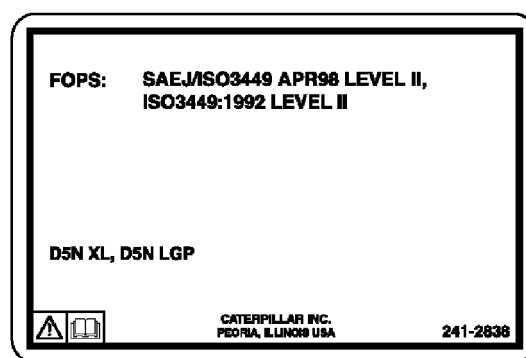


Illustration 42

g01056125

(S/N: AGG903-Up)

(S/N: AKD802-Up)



Illustration 43

g00921851

Safety Message (4) is located on the right rear post of the FOPS cab.

Structure certification ROPS (5)

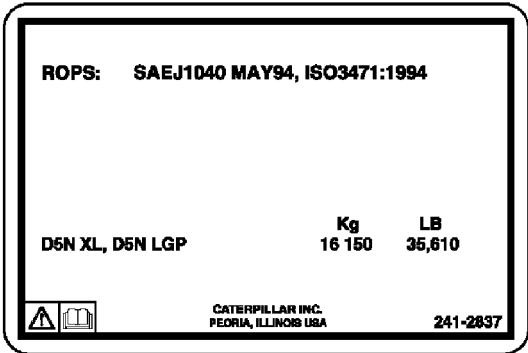


Illustration 44

g01056122

(S/N: AGG903-Up)

(S/N: AKD802-Up)



Illustration 45

g00921852

Safety Message (5) is positioned on the vertical support of the outside right ROPS post.

Machine Security System

This message is located on the control group for the machine security system. The control group is located in the engine compartment.

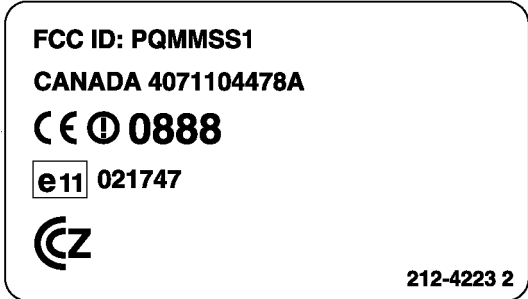


Illustration 46

g00995393

Consult your Caterpillar dealer with any questions that concern the operation of the MSS in a specific country.

Product Link

This message is located on the electronic control group of the Product Link module.

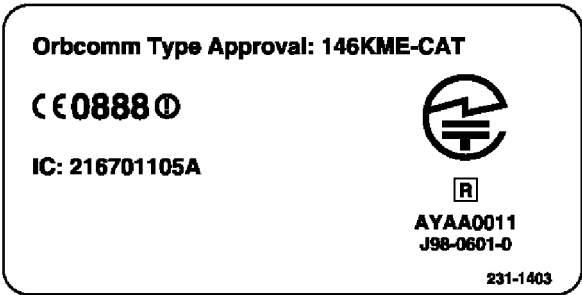


Illustration 47

g01057253

Consult your Caterpillar dealer with any questions that concern the installation or the operation of the Product Link.

i01834458

Emissions Certification Film

SMCS Code: 1000; 7000; 7405

Emission Certification Film

1

CATERPILLAR INC.

ENGINE MODEL : 3116 - DISPLACEMENT : 6.6L - VALVE LASH : 0.38mm INTAKE 0.64mm EXHAUST

CAT

ENGINE FAMILY
XCPXL06.6MRB

MAXIMUM
ADVERTISED
KW (HP)
164 (220)

MAXIMUM
RATED
SPEED (RPM)
2600

MAXIMUM
LOW IDLE
SPEED (RPM)
875

MAX. FUEL RATE
@ MAXIMUM
(mm³/STROKE)
104

MAXIMUM
INITIAL TIMING
DEGREES BTDC
11.5

EXHAUST
EMISSION
CONTROL SYSTEM
EM,D,LT,C,SPL,CAC

THIS 3116 ENGINE CONFORMS TO DIRECTIVE 97/68/EC FOR NON-ROAD ENGINES.
THIS 3116 ENGINE CONFORMS TO 2000 U.S. EPA AND CALIFORNIA REGULATIONS LARGE NON-ROAD COMPRESSION-IGNITION ENGINES.
THIS ENGINE IS CERTIFIED TO OPERATE ON COMMERCIALLY AVAILABLE DIESEL FUEL.

EC TYPE APPROVAL NO. eURL*97/68AA*0001*00

DATE OF MANUFACTURE MONTH : 08

7E-8030 01

2

CATERPILLAR INC.

MODÈLE MOTEUR : 3116 - DÉBIT : 6,6 l - JEU SOUPAPES : 0,38 mm ADMISSION : 0,64 mm ÉCHAPPEMENT

CAT

FAMILLE
DE MOTEURS :
XCPXL06.6MRB

Kw (HP)
MAXI
PUBLIES :
164 (220)

MAXI
RÉGIME
NOMINAL (tr/mn) :
2600

MAXI
RÉGIME
RALENTI (tr/mn) :
875

MAXI DÉBIT D'INJ.
À PUIS: MAXI
(mm³/STROKE) (PISTON) :
104

MAXI CALAGE
INITIAL D'INJ.
(DEGRÉS) (AVANT PMH) :
11,5

DISPOSITIF
ANTI-POLLUANT :
FM,D,LT,C,SPL,CAC

CE MOTEUR 3116 EST CONFORME AUX DIRECTIVES 97/68/EC POUR LES MOTEURS NON ROUTIERS.
CE MOTEUR 3116 EST CONFORME AUX RÉGLEMENTATIONS 2000 DE L'AGENCE AMÉRICAINE DE PROTECTION DE L'ENVIRONNEMENT (EPA) ET DE LA CALIFORNIE POUR LES GROS MOTEURS NON ROUTIERS À COMPRESSION-CONTACT.
CE MOTEUR EST HOMOLOGUÉ POUR FONCTIONNER AVEC LE CARBURANT DIESEL DU COMMERCE.

NO APPROBATION TYPE EC eURL*97/68AA*0001*00

DATE DE FABRICATION (MOIS) 08

Étiquette d'homologation anti-pollution

Illustration 48

g00937112

The emission certification film is located on the engine (typical example).

(1) English

(2) French